ProDoc BFA Series

Digital Physician Scale with Body Fat Analysis

PD150

PD350

PD350DHR

(Digital Height Rod)

and

PD350MHR

(Mechanical Height Rod)

Owner's Manual

0044-M380-O1 Rev A
02/12

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Proper Disposal

When this device reaches the end of its useful life, it must be properly disposed of. It must not be disposed of as unsorted municipal waste. Within the European Union, this device should be returned to the distributor from where it was purchased for proper disposal. This is in accordance with EU Directive 2002/96/EC. Within North America, the device should be disposed of in accordance with the local laws regarding the disposal of waste electrical and electronic equipment.

It is everyone's responsibility to help maintain the environment and to reduce the effects of hazardous substances contained in electrical and electronic equipment on human health. Please do your part by making certain that the device is properly disposed of. The symbol shown to the right indicates that this device must not be disposed of in unsorted municipal waste programs.

FCC Compliance Statement

WARNING! This equipment generates uses and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user will be responsible to take whatever measures necessary to correct the interference.

You may find the booklet "How to Identify and Resolve Radio TV Interference Problems" prepared by the Federal Communications Commission helpful. It is available from the U.S. Government Printing Office, Washington, D.C. 20402. Request stock No. 001-000-00315-4.

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Serial Number_____

Date of Purchase _____

Purchased From_____

_____

_____

_____

RETAIN THIS INFORMATION FOR FUTURE USE

INTRODUCTION

The Detecto ProDoc BFA Series Digital Physician Scale with Body Fat Analysis is designed and manufactured in a facility certified ISO 9001 Quality, ISO 14001 Environment, OHSAS 18001 Health and Safety Management Systems and ISO 13485 Medical Devices Quality Management System. The scale uses the method of Bioelectrical Impedance Analysis (BIA) to estimate body fat, total body water, bone mass and muscle mass. It sends a harmless amount of electricity into the body, then estimates from the measured impedance of the body, the percentage of total body water, percentage body fat, percentage bone mass and percentage muscle mass. The body fat scale is also equipped with an "Athlete Mode" for athletes whose body build is different from non-athletes.

Please read this manual thoroughly before using your scale and keep it handy for future reference. It contains important instructions for installation and proper operation of your scale.

SPECIFICATIONS

Model Number ……	PD150 (Floor Scale with Remote Display) PD350 (Eye-Level Scale) PD350DHR (Eye-Level Scale with Digital Height Rod) PD350MHR (Eye-Level Scale with Mechanical Height Rod)
Capacity	0-220 lb x 0.1 lb (0-100 kg x 50g) 220-550 lb x 0.2 lb (100-250 kg x 100g)
Weight Units .....……	Pounds or Kilograms (selectable)
Power Requirements ……	Six (6) "AA" size Alkaline batteries (*not included*) OR an optional Medical device 9V AC/DC wall plug-in adapter (Cardinal part number PD-AC, includes USA plug). Also available UK plug (PD-UKPLUG) or EU plug (PD-EUPLUG).
Output Power for Body Fat Analyzer	300uA
Display ……	Five digit, seven segment, 1.2 inch (29 mm) high LCD
Operation Temperature ……	50 to 104 ºF (+10 to +40 ºC)
Keypad ….....……	10-Key Numeric, ON/OFF, MODE/ENTER/HEIGHT, LOCK/RELEASE, PRINT/UNITS, 0/ZERO, 1/TARE, ▲RECALL and ▼STORE
Dimensions	
PD150 Display ..……..... Base …….....	5.25" H x 7.87" W x 2.125" D (134 mm x 200 mm x 54 mm) 3.33" H x 12.5" W x 13.0" D (85 mm x 318 mm x 330 mm)
PD350 ……	48.0" H x 12.6" W x 17.0" D (1219 mm x 320 mm x 433 mm)
PD350MHR ……	48.0" H x 14.0" W x 17.0" D (1219 mm x 354 mm x 433 mm)
PD350DHR …….....	48.0" H x 14.0" W x 17.0" D (1219 mm x 354 mm x 433 mm)

SPECIFICATIONS, CONT.

- Bioelectrical Impedance Analysis (BIA) technology for body fat and total body water percentage, bone mass and muscle mass estimation
- Simple weighing function
- Height measurement (available on models equipped with height rod)
- Athlete (for age 18 or above) or Normal mode selection
- Estimation mode selection
- Body fat and total body water level indicator
- BMI calculation
- 4-user memories and recall function
- Zero function
- Tare function
- Hold function
- Sleep function
- Low battery indicator
- Available with or without height rod
- Level indicator and adjustable feet
- Body fat and total body water graduation: 0.1%
- Muscle mass and bone mass graduation: 0.1%
- Age range from 10 to 99 years
- Height range: 110 to 200cm (for height rod measurement); 60 to 240cm (for manual input)
- Height graduation: 0.1cm
- Body fat range: 4 to 50%
- Accuracy of weight measurement: ±0.05kg(2-50kg), ±0.1kg(50-200kg), ±0.15kg(200-220kg)
- Serial Port (to be used with printers only)
- USB Port (to interface with a PC only)

NOTES ON SAFETY

Please read this section carefully to familiarize yourself with features and operations before using the unit.

- The warning signs and the sample icons shown here are listed in order for you to use this product safely and correctly as well as to prevent product damage, risk and injury to you and others.
- The icons and meanings are as follows:

⚠ **PRECAUTION NOTICE**	Indicate the right condition to use the product and prevent damage, risk and injury.
⚠ **IMPORTANT NOTICE TO USERS**	Indicate the important notice users should read before using the product.
⚠ **CARE AND MAINTENANCE**	Indicate matters in which the possibility of damage may happen as a result of incorrect handling and improper maintenance.

INTENDED USE

This scale is intended to measure body weight and impedance and estimate percentage of body fat and body water, bone mass and muscle mass using BIA (Bioelectrical Impedance Analysis). It is intended for use by healthy children 10-17 years old and healthy adults with active, moderately active and inactive lifestyles for body composition assessment.

⚠ PRECAUTION NOTICE

* Do not use the scale on subjects who have body implants such as pacemaker, artificial limbs, contraceptive devices, metal plates or screws. It may cause the devices to malfunction or produce an inaccurate result. When in doubt, please consult your physician.
* Do not disassemble the scale as incorrect handling may cause injury.

⚠ IMPORTANT NOTICE TO USERS

- This product is intended for adults and children (ages 10 to 85).
- Use on a firm and flat surface.
- Make sure to use only the type of battery stated or the required adaptor.
- To reconnect the power, please wait until the LCD is completely powered off after disconnecting the power.
- Move all weight off the platform before measurement.
- The "Athlete" mode is only applied to age 18 or above.
- Body fat percentage estimates will vary with the amount of water in the body, and can be affected by dehydration or over-hydration due to such factors as alcohol consumption, menstruation, illness, intense exercise, etc.
- Do not use on pregnant women. The result is inaccurate and effects on the fetus are unknown.
- For body fat and body water estimates, always weigh in bare feet.

EDUCATION INFORMATION

IMPORTANT INFORMATION TO KNOW BEFORE USING YOUR BODY FAT SCALE

Before using the scale, you should know...

1. Why is it important to monitor percentage body fat (%BF)?

The absolute weight traditionally determines whether or not a person is obese. Weight change in itself does not indicate whether it was the weight of body fat or muscle that had changed. In weight management, it is desirable that muscle mass be maintained while body fat is lost. Thus, monitoring the percentage of fat in the body is an important step toward successful weight management and body health.

The optimal %BF of an individual varies according to age and gender. The tables below may be used as a guide:

Standard for Men
(Source: University of Illinois Medical Center, Chicago, USA)

Rating	Age				
	20-29	30-39	40-49	50-59	60+
Low	<13	<14	<16	<17	<18
Optimal	14-20	15-21	17-23	18-24	19-25
Moderate	21-23	22-24	24-26	25-27	26-28
High	> 23	>24	>26	>27	>28

Standard for Women
(Source: University of Illinois Medical Center, Chicago, USA)

Rating	Age				
	20-29	30-39	40-49	50-59	60+
Low	<19	<20	<21	<22	<23
Optimal	20-28	21-29	22-30	23-31	24-32
Moderate	29-31	30-32	31-33	32-33	33-35
High	> 31	>32	>33	>34	>35

2. How is percentage body fat (%BF) estimated?

The percentage of BF is measured by a method called Bioelectrical Impedance Analysis (BIA). The use of BIA to estimate body fat has been pioneered since the seventies. It was only in the past decade that the estimation of body fat using BIA technology was successfully offered to the consumer as a compact bathroom scale. With BIA technology, a low intensity electrical signal is sent through the body. The signal is very low and causes no bodily harm. Depending on the amount of body fat of the individual, the electrical signal will flow with a different degree of difficulty. The difficulty with which a signal flows through the body is called electrical impedance. Hence, by measuring the electrical impedance and applying to the data a proprietary algorithm, %BF can be estimated. Please note that the percentage of body fat and body water will not add up to 100%.

Please be reminded that the %BF estimated with the scale represents only a good approximation of your actual body fat. There exist clinical methods of estimating body fat that can be ordered by your physician.

3. Why is it important to monitor percentage Total Body Water (%TBW) in the body?

Water is an essential component of the body and its level is one of the health indicators. Water makes up approximately between 50-70% of the body's weight. It is present proportionally more in lean tissue compared to fat tissue. Water is a medium for biochemical reactions that regulate body functions. Waste products are carried in water from cells for excretion in urine and sweat. Water provides form to cells; helps to maintain body temperature; provides moisture to skin and mucosa; cushions vital organs; lubricates joints and is a component of many body fluids. The amount of water in the body fluctuates with the hydration level of the body and state of health. Monitoring the level of body water can be a useful tool for one's health maintenance. Similar to body fat estimation, the %TBW function provided in this scale is based on BIA.

The estimated %TBW may vary according to your hydration level, that is, how much water you have drunk or how much you have sweated immediately prior to the estimation. For better accuracy, avoid fluctuation in hydration level prior to the estimation. The accuracy of the scale in estimating TBW will also decrease with individuals suffering from diseases that tend to accumulate water in the body.

The optimal %TBW of an individual varies according to age and gender. The table below may be used as a guide:

(Source: University of Illinois Medical Center, Chicago, USA)

	%BF Range	Optimal % TBW Range
Men	4 to 14%	70 to 63%
	15 to 21%	63 to 57%
	22 to 24%	57 to 55%
	25% and over	55 to 37%
Women	4 to 20%	70 to 58%
	21 to 29%	58 to 52%
	30 to 32%	52 to 49%
	33% and over	49 to 37%

Please be reminded that the %TBW estimated with the scale represents only a good approximation of your TBW. There exist clinical methods of estimating total body water that can be ordered by your physician.

4. When should I use the scale's body fat and total body water functions?

For maximum accuracy and repeatability, it is recommended that the scale's body fat and total body water functions be used at approximately the same time of the day, e.g. before breakfast in the morning. It is also a good practice to avoid swings in hydration level of the body prior to the measurement. Establishing your own baseline value of %BF and %TBW and track their changes is better than merely comparing your %BF and %TBW value to the population's normal value.

5. Why is the Athlete Mode necessary in a Body Fat Analyzer?

It has been found that body fat estimation using BIA could overestimate the percentage body fat of adult elite athletes. The physiological variation of athletes in bone density and level of hydration are two of the reasons said to account for the difference.

The Athlete mode is selectable only for adults of 15 years of age or older.

6. Definition of an Athlete

The general consensus among researchers is that a quantitative dimension could be used in defining an athlete. For example, an athlete could be defined as a person who consistently trains a minimum of three times per week for two hours each time, in order to improve specific skills required in the performance of their specific sport and/or activity.

7. What is Muscle Mass?

Our Body Fat Scale estimates the weight of Skeletal Muscle Mass in your body.

You've got around 650 muscles in your body, and they make up roughly half of your body weight. These muscles can be divided **into three different groups: Skeletal, Smooth and Cardiac**. All of these muscles can stretch and contract, but they perform very different functions.

Skeletal muscle: Produces movement, maintains posture, stabilizes joints and generates heat

Smooth muscle: Found in the walls of hollow organs

Cardiac muscle: Exists only in your heart

Skeletal muscle (SM)

The tissue most commonly thought of as muscle is skeletal muscle. Skeletal muscles cover your skeleton, giving your body its shape. They are attached to your skeleton by strong, springy tendons or are directly connected to rough patches of bone. Skeletal muscles are under voluntary control, which means you consciously control what they do. Just about all body movement, from walking to nodding your head, is caused by skeletal muscle contraction. Your skeletal muscles function almost continuously to maintain your posture, making one tiny adjustment after another to keep your body upright. Skeletal muscle is also important for holding your bones in the correct position and prevents your joints from dislocating. Some skeletal muscles in your face are directly attached to your skin. The slightest contraction of one of these muscles changes your facial expression.

Skeletal muscle generates heat as a by-product of muscle activity. This heat is vital for maintaining your normal body temperature.

Skeletal muscle represents approximately 30% of body weight of a healthy 58 kg woman or 40% of a 70 kg man. (International Commission on Radiological Protection, 1975)

8. What is Bone Mass?

Our Body Fat Scale estimates the weight of non-living bone mineral content. This is important for monitoring and maintaining healthy bones through exercise and calcium-rich diet.

An adult skeleton is made up of 206 bones, which come in several different shapes and sizes and have specific structure.

Your bones contain blood vessels, nerve cells and living bone cells known as osteocytes. These are held together by a framework of hard, non-living material containing calcium and phosphorous. A thin membrane called the periosteum covers the surface of your bones.

Bone Mineral Content differs according to age and sex.

For Adults: The average bone mineral content of 15-29 year old female is approximately 2.7 kg, for a 15-29 year old male is approximately between 2.7 and 3.5 kg. (Rico et al. 1993)

For Children: The average bone mineral content of 8-16 year old child is approximately between 0.8 and 2.2 kg. (Faulkner et al. 1993)

9. What is Body Mass Index (BMI)?

BMI is a ratio of a person's weight to height. BMI is commonly used to classify weight as "healthy" or "unhealthy".

European version (BMI for adult 19-99 of age):

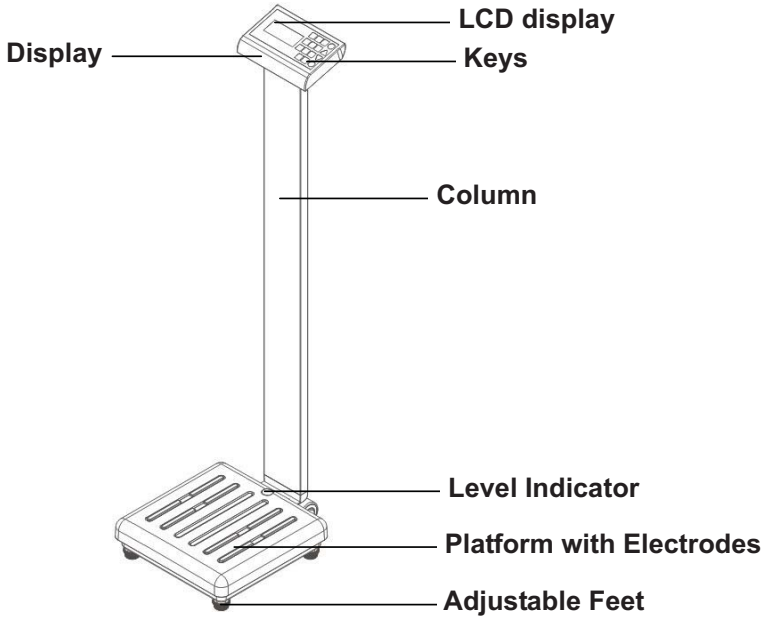
BMI	Classification
30 and over	Obese
25 -29.9	Overweight
18.5 – 24.9	Normal
Under 18.5	Underweight

Asian Version (BMI for adult 19-99 of age):

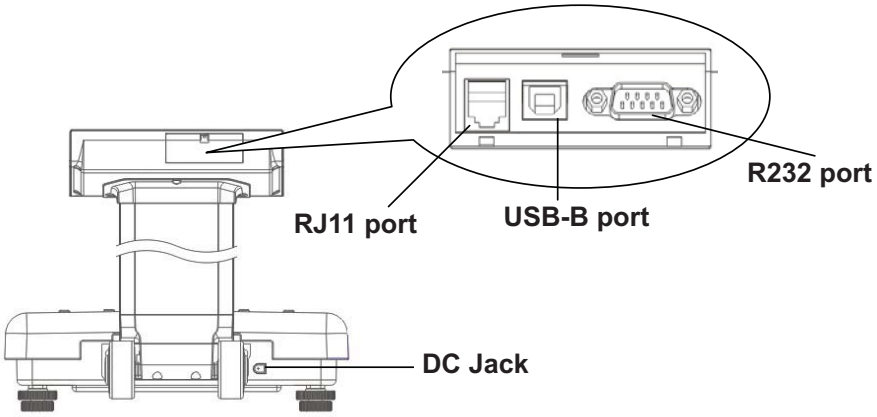
BMI	Classification
25 and over	Obese
23 -24.9	Overweight
18.5 – 22.9	Normal
Under 18.5	Underweight

PRODUCT DESCRIPTION

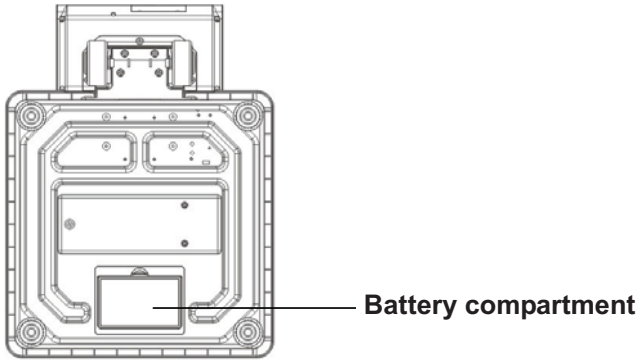
Front View



Back View



Bottom View

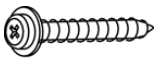


PD150

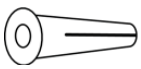
Unpacking

Remove the scale base, display, hardware pack and other components from the shipping carton. After removing from the carton, check for any damage that may have taken place during shipment. *Keep and use the original carton and packing material for return shipment if it should become necessary*. The purchaser is responsible for filing all claims for any damages or loss incurred during transit. Remove all plastic wrapping, foam fillers and cardboard material from the scale base, display and other components. You should have the following components:

(1) Scale Base
(1) Remote Display
(1) Wall Bracket "A"
    (includes four (4) feet for desk or table mounting)
(1) Wall Bracket "B"
(1) Hardware Pack, containing:
    (2) M3.0x25 Screws and plastic wall anchors



M3.0x25 Screw



Plastic Wall Anchor

Assembly

The PD150 does not require any assembly. After installing batteries, the scale is ready for operation.

Quick Start

Although it is recommended that you read this manual before attempting to operate the scale, this section is included to provide a condensed set of instructions on installing and using the scale. At a minimum, please make certain you read all of the caution and warning statements.

Step 1. Place the scale on the floor and then place the display at a convenient distance from the scale base.

Step 2. Turn the scale over on the floor and then locate the battery access cover on the bottom of the scale.

Step 3. Remove the cover, install six (6) "AA" size batteries[1] and then replace the cover.

Step 4. Turn the scale over to the normal operating position and make sure it is level.

Step 5. Press the **ON/OFF** key to turn the scale on.[2]

Step 6. When the display is showing 0.0, have to patient step on the scale.

Step 7. Wait a few seconds for the weight to display and then read the patient's weight.

Step 8. Patient may now step off scale.

Step 9. Press the **ON/OFF** key to turn the scale off.

[1] See page 21 for detailed instructions on installing the batteries.

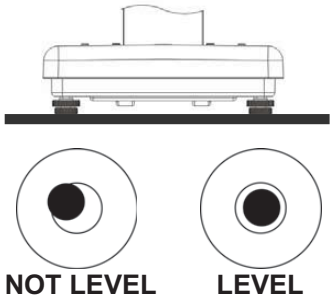
[2] For complete Operation and Setup instructions, refer to pages 23 to 40.

PD150

Placing the Scale

Place the scale on a flat, level floor or low cut carpet away from any rapidly moving air source (heating and cooling vents).

Check to make certain the scale is level. The level indicator is located at the rear of the scale. If the scale is not level (the bubble will not be centered), loosen the locking ring on all four (4) feet and adjust them as required to center the bubble and attain a level scale. Once the scale is level, lock the feet in place by tightening the adjustment locking rings against the bottom of the scale.



IMPORTANT! Any time a scale is moved or re-located, be sure to check the level bubble to make sure the scale is level before using.

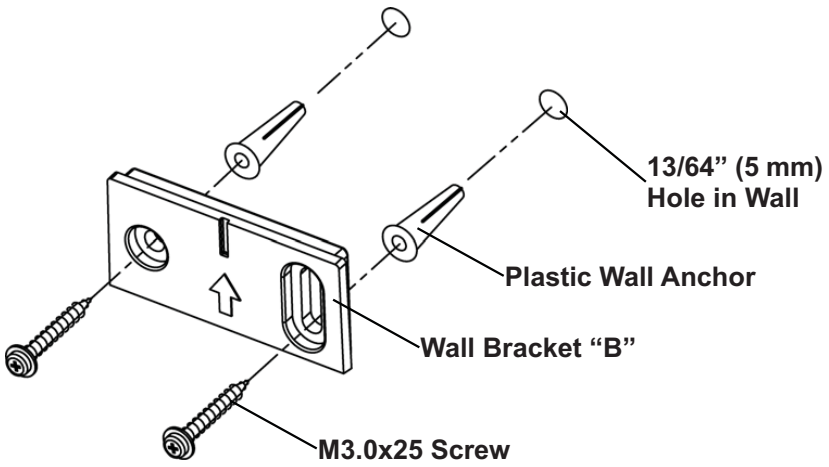
Placing the Display

The PD150 display has an 87” (220 cm) cable to allow it to be placed at a convenient position away from the scale base. A bracket is included to mount the display on a wall or the bracket (and included feet) can used to place it on a desk for easy viewing.

Wall Mounting

1. Choose the location to mount the display on the wall. The location should be free of temperature extremes and water. It should be where the display can be easily viewed, not subject to direct sunlight and where the keypad is within easy reach of the operator.
2. Make certain the structure and mounting hardware are of sufficient strength to support the display. The mounting bracket should be securely fastened to the wall so that it cannot break loose from the mounting surface.
3. Referring to Figure No. 1 and using Wall Bracket “B” for a template, place the bracket against the wall (the notch (*arrow*) pointing up) and mark the holes to use to mount it. Remove the bracket and drill two (2) 13/64” (5 mm) holes in the wall for the mounting wall anchors.
4. Insert the wall anchors in the wall until they are flush with the wall.
5. With the notch (*arrow*) pointing up on Wall Bracket “B”, insert the two (2) M3.0x25 screws through the bracket and into the wall anchors.
6. Tighten the screws to secure the bracket to the wall.

Figure No. 1



Placing the Display

Wall Mounting, Cont.

7. Referring to Figure No. 2, make sure the four (4) feet of Wall Bracket "A" are placed in the bracket.

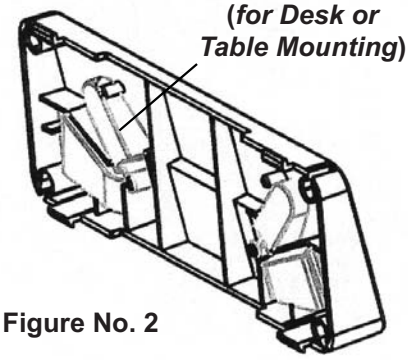


Figure No. 2

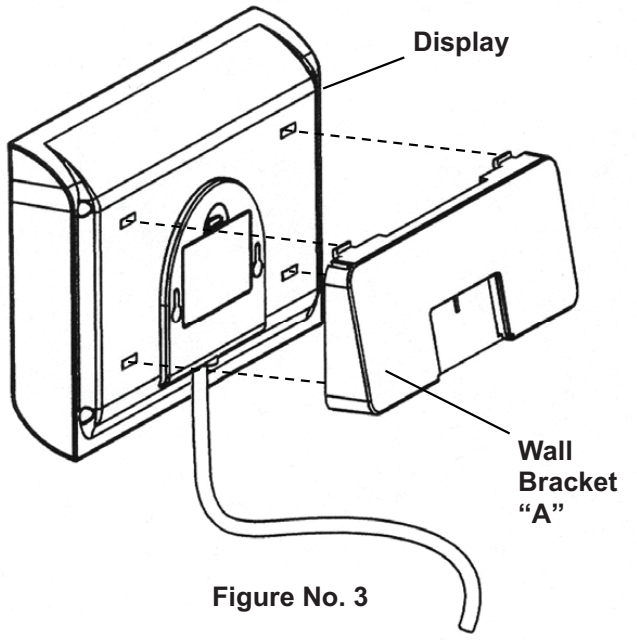


Figure No. 3

8. Next, locate the four (4) slots on the back of the display and align them with the four (4) tabs on the Wall Bracket "A". Refer to Figure No. 3.

9. Insert the tabs into the slots and press together until the bracket locks to the back of the display.

10. Referring to Figure No. 4, align the cutout in Wall Bracket "A" with Wall Bracket "B" and gently pull down to secure the display to the wall.

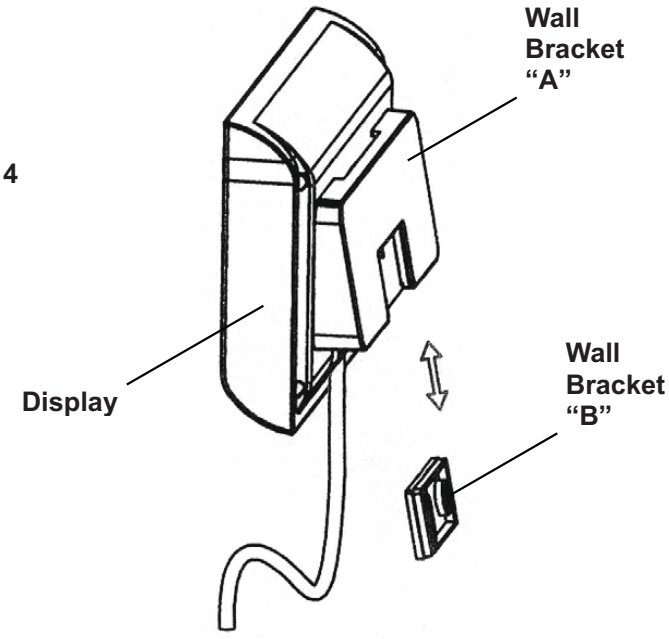


Figure No. 4

Placing the Display

Desk or Table Mounting

1. The location chosen should be a stable, level surface (either a desk or solid table), free of temperature extremes and water. The display should be where it can be easily viewed, not subject to direct sunlight and where the keypad is within easy reach of the operator.

2. Referring to Figure No. 5, remove the four (4) feet from inside Wall Bracket "A" and install them in each corner of the bracket as shown in Figure No. 6.

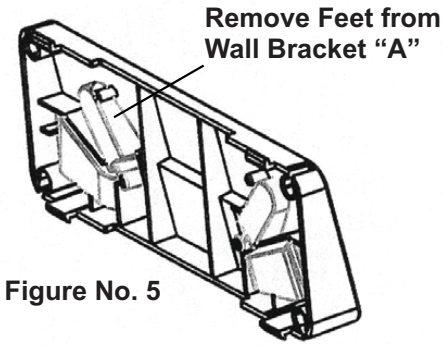


Figure No. 5

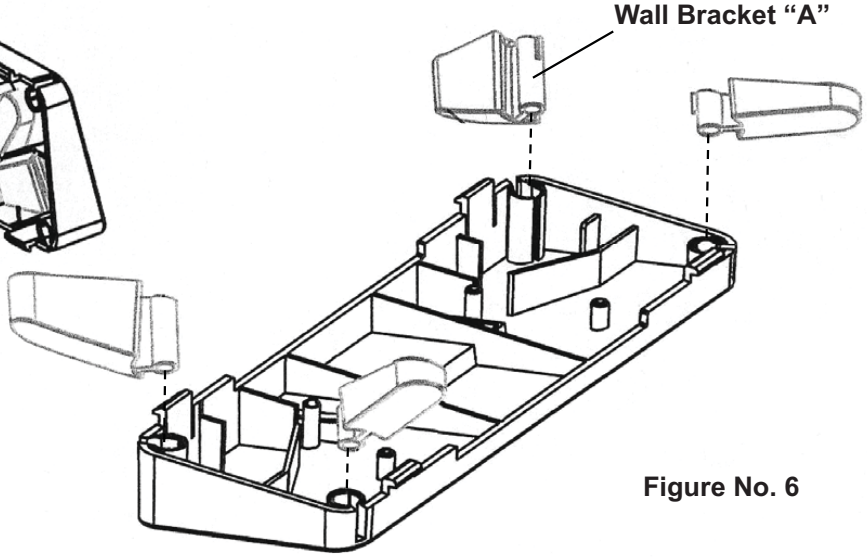


Figure No. 6

3. Next, locate the four (4) slots in the back of the display. Refer to Figure No. 7.

Figure No. 7

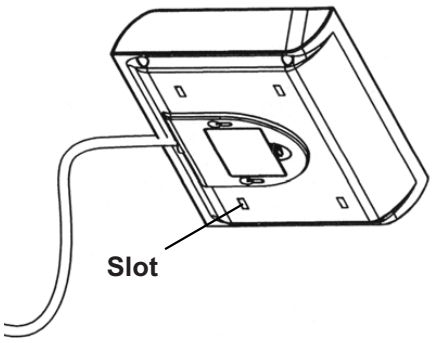
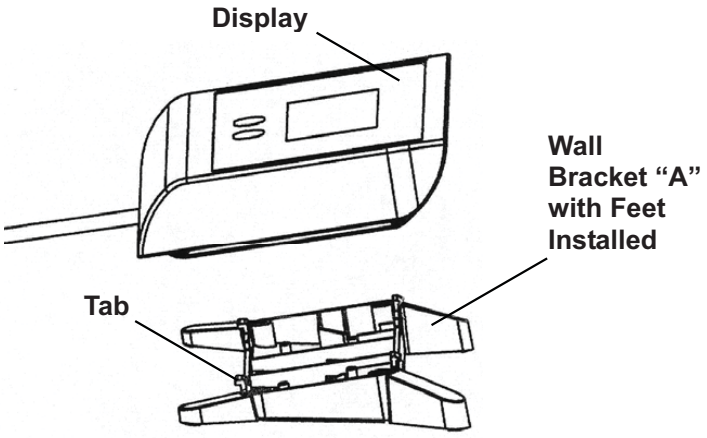


Figure No. 8



4. Referring to Figure No. 8, align and insert the tabs on the bracket with the slots in the display back and press together until the bracket locks to the back of the display.

PD350

Unpacking

Remove[1] the scale base, column with attached display, hardware pack and other components from the shipping carton. After removing from the carton, check for any damage that may have taken place during shipment. *Keep and use the original carton and packing material for return shipment if it should become necessary*. The purchaser is responsible for filing all claims for any damages or loss incurred during transit. Remove all plastic wrapping, foam fillers and cardboard material from the scale base, display and other components. You should have the following components:

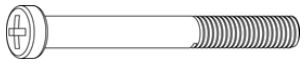
① Scale Base

② Column with attached Display

③ Hardware Pack, containing:

(4) M5x45 Machine Screws

(1) Philips Screwdriver



M5x45 Machine Screw

④ Optional Digital or Mechanical Height Rod

Figure No. 9

[1] See Note Below.

NOTE: To remove the scale base, column with attached display and optional height rod from the carton, grasp both sides of the scale base and lift up with equal force.

Assembly

Installing the Column

1. Place the scale on a desk or table

2. Connect the connection cable to the preset cable in the scale base by aligning the tab on the pin end connector of the connection cable with the notch on the socket end of the preset cable connector and push together. Next, slide the collar on the preset cable onto the threads of the connection cable and screw together. Do not use tools, finger-tighten only.

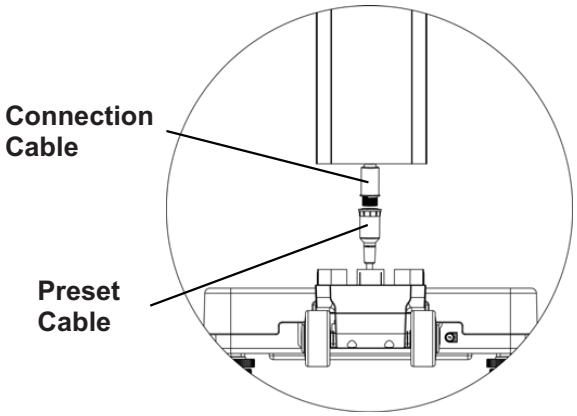


Figure No. 10

3. Align the column with the scale base and then place the column over the tabs on the scale base.

   NOTE: Center the cable in the column (as shown in Figure No. 11) when placing the column over the tabs on the scale base.

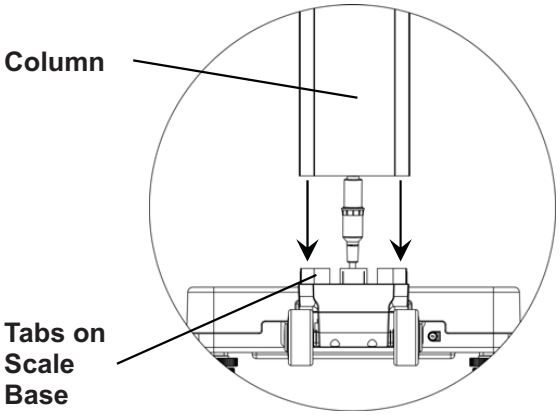


Figure No. 11

4. While holding the column in place on the scale, carefully lay the scale down with the column horizontal to the desk or table.

5. Attach the column to the scale base by inserting four (4) 5x45 machine screws through the recessed holes in the scale base into the threaded holes of the column.

6. Tighten the screws to secure the column to the scale base.

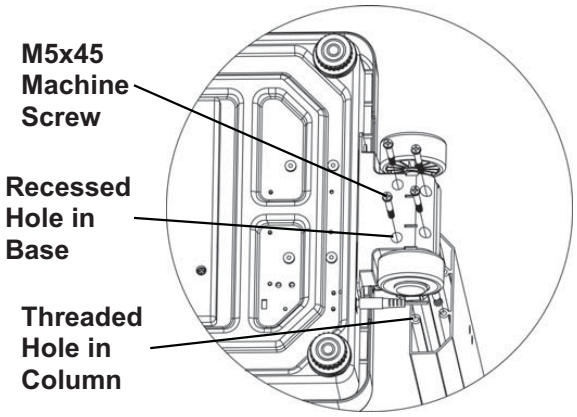


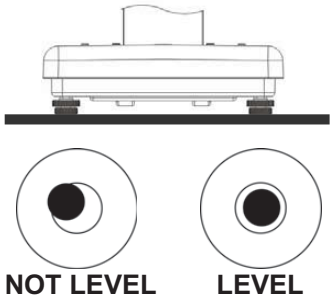
Figure No. 12

PD350

Placing the Scale

Place the scale on a flat, level floor or low cut carpet away from any rapidly moving air source (heating and cooling vents).

Check to make certain the scale is level. The level indicator is located at the rear of the scale. If the scale is not level (the bubble will not be centered), loosen the locking ring on all four (4) feet and adjust them as required to center the bubble and attain a level scale. Once the scale is level, lock the feet in place by tightening the adjustment locking rings against the bottom of the scale.



IMPORTANT! Any time a scale is moved or re-located, be sure to check the level bubble to make sure the scale is level before using.

Quick Start

Step 1. Once the scale is assembled, place it on the floor.

Step 2. Carefully lay the scale over on its side with the edge of the display resting on the floor and then locate the battery access cover on the bottom of the scale.

Step 3. Remove the cover, install six (6) "AA" size batteries[1] and then replace the cover.

Step 4. Return the scale to the upright, normal operating position and make sure it is level.

Step 5. Press the **ON/OFF** key to turn the scale on.[2]

Step 6. When the display is showing 0.0, have to patient step on the scale.

Step 7. Wait a few seconds for the weight to display and then read the patient's weight.

Step 8. Patient may now step off scale.

Step 9. Press the **ON/OFF** key to turn the scale off.

[1] See page 21 for detailed instructions on installing the batteries.

[2] For complete Operation and Setup instructions, refer to pages 23 to 40.

PD350DHR

Digital Height Rod Installation

The Digital Height Rod is packed in its own carton inside the main carton. Before starting installation, please unpack carefully and remove all plastic wrappings, foam fillers and cardboard material. You should have the following components:

(1) Detecto Digital Height Rod (DHR)
(1) Upper Mounting Bracket (with 2 plastic cable clips)
(1) Lower Mounting Bracket
(1) Hardware Pack, containing:
(8) M4x4.5 PM Screws (bracket to height rod)
(8) M4x10 PM Screws (bracket to column)
(8) Lock Washers (bracket to column)

M4x4.5 Machine Screw

M4x10 Machine Screw

Lock Washer

1. Referring to Figure No. 13, align the upper bracket with the holes in the height rod (near the headpiece) and install four (4) M4x4.5 PM screws to secure the bracket to the height rod.

2. Next, align the lower bracket with the lower holes in the height rod and install four (4) M4x4.5 PM screws to secure the bracket to the height rod. See Figure No. 14.

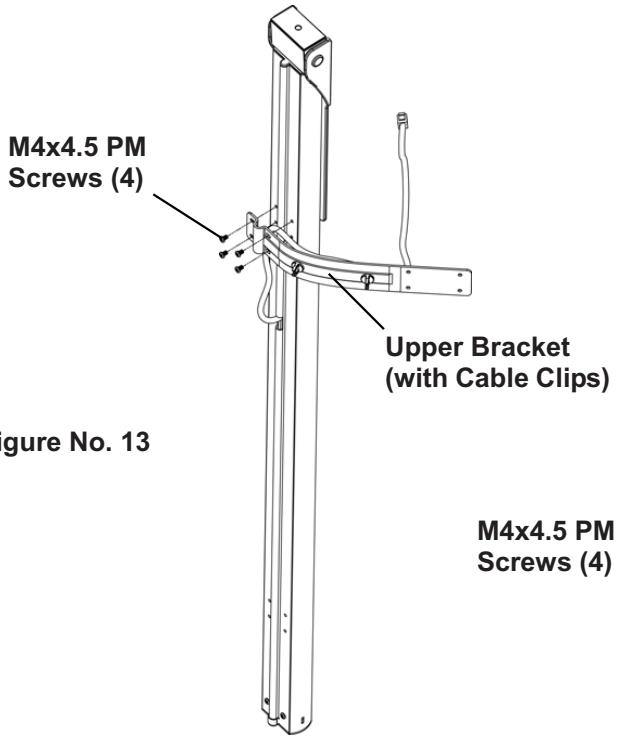


Figure No. 13

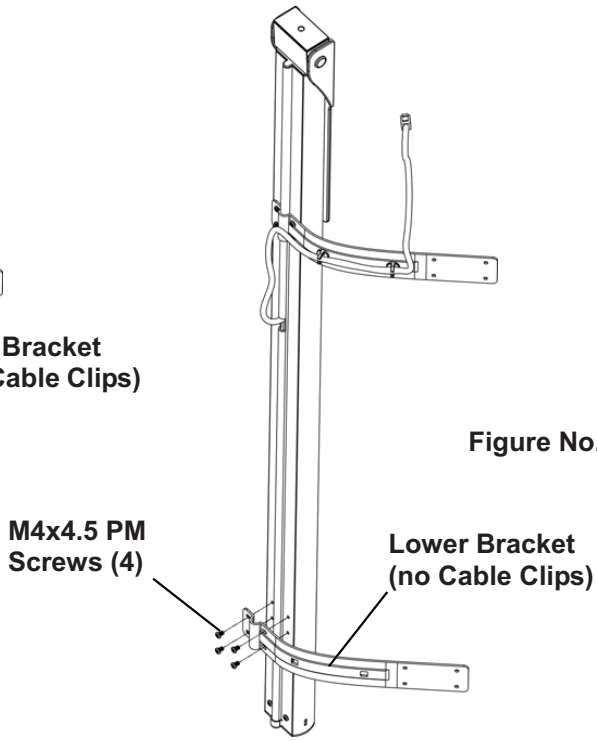


Figure No. 14

Digital Height Rod Installation, Cont.

3. Align the upper mounting bracket with the holes near the display in the back of the column and install four (4) M4x10 PM screws with lock washers to secure the bracket to the column. Align the holes in the lower bracket with the lower holes in the column and install four (4) M4x10 PM screws with lock washers to secure it to the column. See Figure No. 15.

Figure No. 15

4. Remove the plastic cover on the back of the display exposing the modular connector socket. Insert the modular connector of the DHR cable into the socket on the display until it locks in place. (It will click when locked in place). Route the DHR cable through the two (2) plastic cable clips on the upper bracket. See Figure No. 16

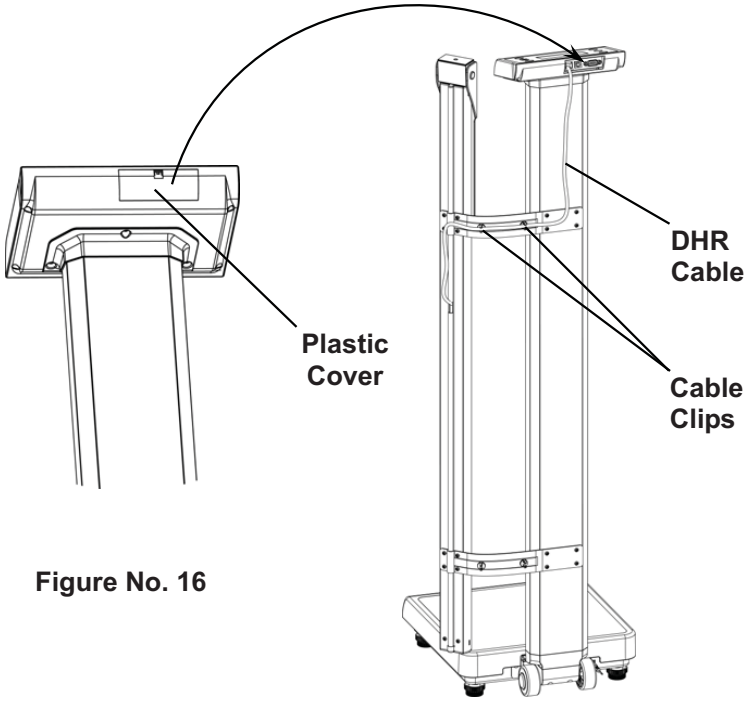


Figure No. 16

PD350MHR

Mechanical Height Rod Installation

The Mechanical Height Rod is packed in its own carton inside the main carton. Before starting installation, please unpack carefully and remove all plastic wrappings, foam fillers and cardboard material. You should have the following components:

(1) Detecto Mechanical Height Rod (MHR)
(2) Mounting Brackets
(1) Hardware Pack, containing:
  (4) #8-32x1/2" Pan Head Screws (mounting bar to bracket)
  (4) #8-32 Hex Nuts
  (8) M4x10 PM Screws (bracket to column)
  (8) Lock Washers (bracket to column)
  (2) #8-32 Hex Head Screw (MHR to mounting bar)
  (1) Wrench

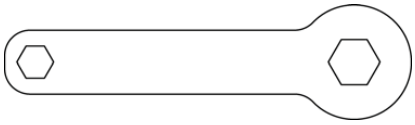
#8-32 Pan Head Screw

#8-32 Hex Nut

M4x10 Machine Screw

Lock Washer

#10-32 Hex Head Screw



Wrench

1. Referring to Figure No. 17, align a bracket with the holes near the top of the mounting bar and install two (2) #8-32x1/2" Pan Head screws and #8-32 Hex nuts to secure the bracket to the mounting bar.
2. Next, align the other bracket with the lower holes in the mounting bar and install two (2) #8-32x1/2" Pan Head screws and #8-32 Hex nuts to secure the bracket to the mounting bar.
3. Install the two (2) #10-32 Hex Head screws in the threaded holes in the mounting bar and tighten them with the included wrench until the hex heads are 1/8" from the bar.

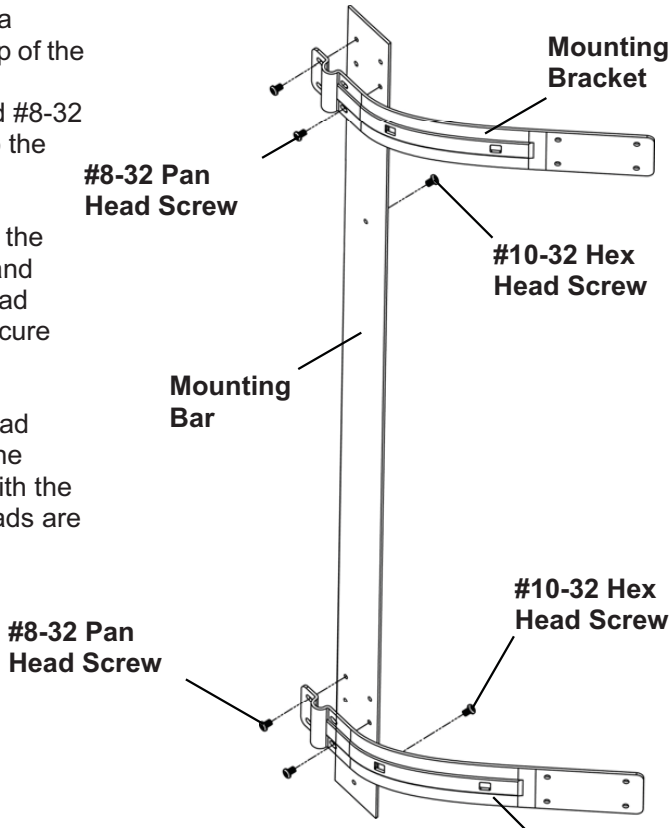


Figure No. 17

Mechanical Height Rod Installation, Cont.

4. Align the upper mounting bracket with the holes near the display in the back of the column and install two (2) M4x10 PM screws to secure the bracket to the column.

5. Align the holes in the lower bracket with the lower holes in the column and install two (2) M4x10 PM screws with lock washers to secure it to the column. See Figure No. 18.

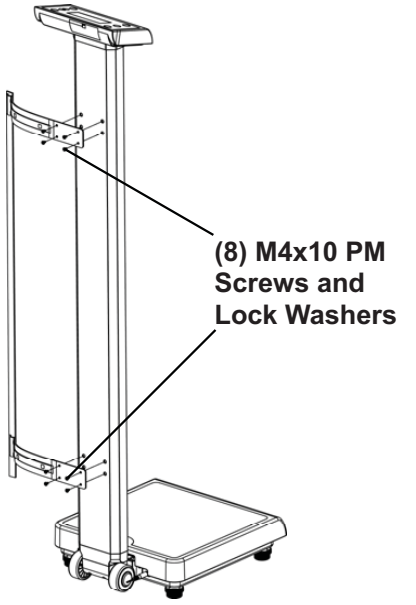


Figure No. 18

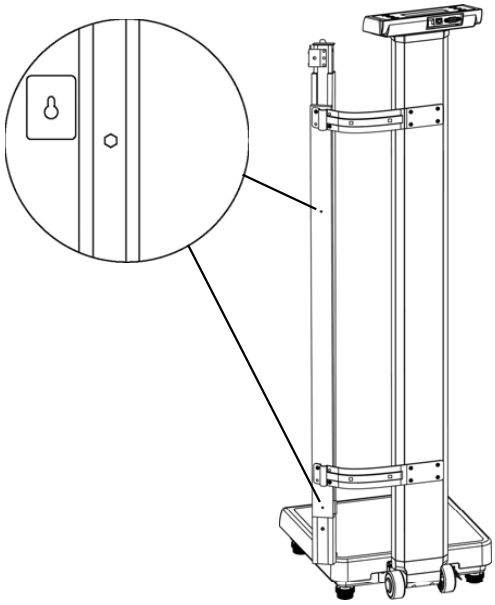


Figure No. 19

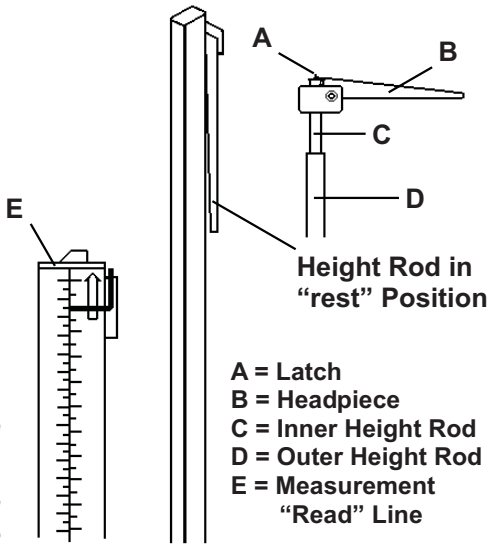
6. Referring to Figure No. 19, place both height rod brackets over the two (2) hex head screws and pull down, securing brackets. Use included wrench to tighten hex head screws.

Operation

1. Before patient steps on scale, headpiece should be rotated to horizontal position, and raised well above patient's head.
2. Patient may now step on scale.
3. Carefully lower height rod while keeping headpiece horizontal, until it rests on top of patient's head. If patient is shorter than 3' 4" (101.5 cm), push latch to right while simultaneously pushing down on headpiece, until headpiece rests on top of patient's head.
4. Read height of patient as follows:

   If back of headpiece points to outer height rod, then it points to correct height.

   If back of headpiece points to inner height rod, then correct height is read at top of outer height rod (see "Read" arrow on outer height rod).



5. While holding headpiece horizontally, raise it above patient’s head. Patient may now step off scale.
6. Rotate headpiece back to vertical position and adjust height rod to “rest” position (headpiece should be locked in place within inner height rod and inner rod should be at its lowest position).

BATTERY OPERATION

Battery operation is a standard feature of the ProDoc Series Scale, although the batteries are optional (not included). You must first obtain and install six (6) "AA" size alkaline batteries before operations can begin. Batteries are contained in a battery holder inside the scale. Access is via a removable cover on the bottom of the scale.

Installation / Replacement

To install or remove the batteries, the following steps should be followed:

PD150

Turn the scale over on the floor or place it on a desk or table.

PD350, PD350MHR and PD350DHR

Tilt the scale to the side (without the height rod, if one is installed) and then *carefully* lay it down with the edge of the display resting on the floor.

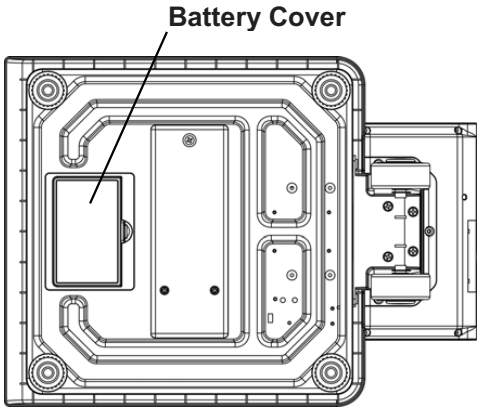


Figure No. 20

1. Referring to Figure No. 20, locate the rectangular battery cover on the bottom of the scale.
2. To install or replace the batteries, first remove the battery cover by pushing in on the tab and lifting it up. Refer to Figure No. 21.

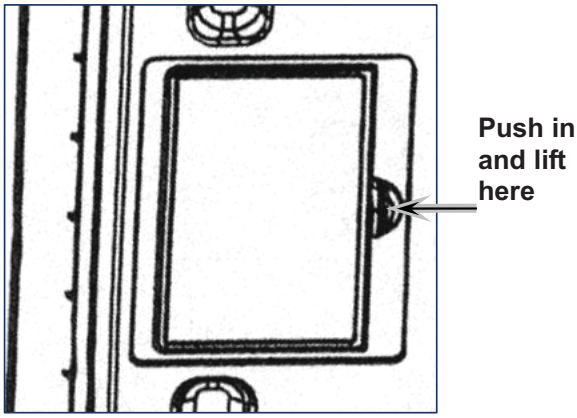


Figure No. 21

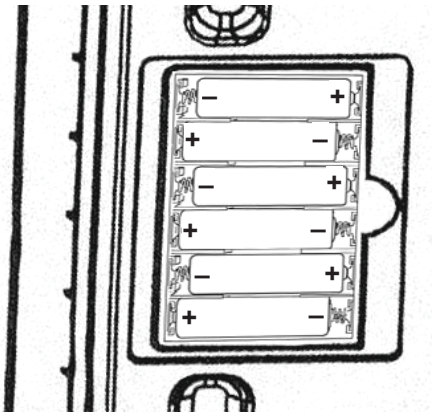


Figure No. 22

3. If installing new batteries, proceed to step 4. If replacing the batteries, remove all six (6) batteries from the battery holder and hen proceed to step 4.
4. Install the six (6) new “AA” size batteries in the battery holder, noting the polarity markings located in the battery holder. See Figure No. 22.
5. Replace the battery cover (it will click when locked in place) and return the scale to the upright position.
6. Make sure the 9V AC/DC power adaptor is not plugged in to the scale.
7. Press the **ON/OFF** key.
8. The display should turn on, show all digits, the software version for a few seconds, followed by a small o moving across the display and then show 0.0 on the display.
9. The scale is now ready for operation.
10. If the display did not turn on, remove the battery cover and check for one or more improperly positioned batteries.

BATTERY OPERATION

Low Battery

When the batteries are near the point they need to be replaced, the display will show LobAt. If the battery voltage drops too low for accurate weighing, the scale will automatically shut off and you will be unable to turn it back on. When the LobAt message is displayed, the operator should replace the batteries or remove the batteries and plug-in the 9V AC/DC adapter.

Automatic Shutoff

The Automatic Shutoff feature will turn the scale off after a period of inactivity (no motion or weight on scale) to prolong battery life. The period of inactivity for the automatic shutoff is selected during the setup process of the scale and can be set for up to nine (9) minutes. To turn the scale back on, you simply press the **ON/OFF** key.

Sleep Mode

The Sleep Mode feature also conserves battery power when the scale remains unused and will show SLEEP on the display to indicate the sleep mode has activated. The sleep mode feature requires that no key is pressed on the keypad and the scale to remain at the center of zero for a period of time to activate. The period of time for the sleep mode is also selected during the setup process of the scale and can be set for up to nine (9) minutes. When a key is pressed or weight is placed on the scale, it will wake up and return to the weight mode.

OPTIONAL AC POWER ADAPTER

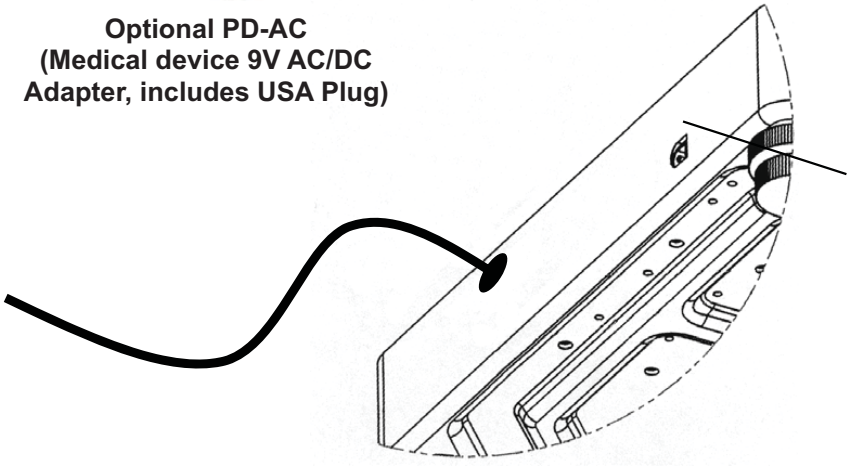
To power the scale using the optional Medical device 9V AC/DC wall plug-in adapter (see Figure No. 23), connect the plug from the adapter into the power jack on the back of the scale base and then plug the power adapter into the proper electrical outlet. Refer to Figure No. 24. On models requiring 220 VAC, it is the customer's responsibility to obtain the correct power adapter plug. The scale is now ready for operation.

Figure No. 23

Optional PD-AC (Medical device 9V AC/DC Adapter, includes USA Plug)

Optional PD-UKPLUG (UK Plug)

Optional PD-EUPLUG (EU Plug)



9V DC Power Jack

(PD150 Shown)

Figure No. 24

OPERATION

Keypad Functions

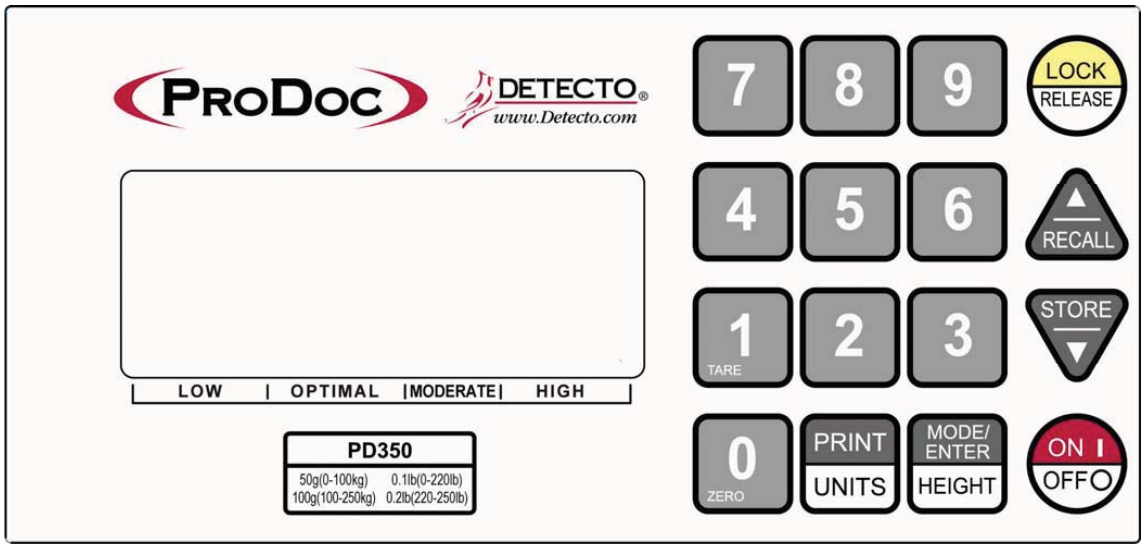


Figure No. 25

DO NOT operate the keypad with pointed objects (pencils, pens, etc). Damage to keypad resulting from this practice is NOT covered under warranty.

With the scale off, pressing this key will apply power to the scale and turn on the display. If the scale is on, pressing this key will show oFF on the display and turn the scale off.

This key is a dual purpose key. First, it is used to send the weight and associated data to the serial printer. During operation, pressing this key will cause a print operation to occur.

Second it is used to change the weighing units between pounds and kilograms. For example, with pounds displayed, pressing and holding this key will change the weighting units to kilograms. **NOTE:** This feature must be enabled during setup and calibration of the scale to be operational.

This key is used to lock and unlock the display. If the HOLD feature was enabled during setup and calibration, pressing this key will cause the display to lock onto the weight. Pressing the key again will unlock the display and return it to zero.

NOTE: The scale will not respond to pressing the **LOCK/RELEASE** key unless the weight is stable and the **STA** annunciator is turned on.

OPERATION

Keypad Functions, Cont.

The **MODE/ENTER/HEIGHT** key is used to perform several functions during normal operations. Note that the scale will not respond to pressing the key unless the weight is stable.

MODE
This function of the key is used to select between the BFA mode, BMI mode and Height entry.

ENTER
This function of the key is used to signal completion of the entry of data and causes the scale to process the data entered.

HEIGHT
This function of the key is used to enter the height.

If the scale has the Digital Height Rod installed, pressing the key once will display the height data from the height rod. Once the height rod is adjusted to the patient, pressing it again will display the Body Mass Index (BMI) calculation. Pressing it a third time, will return the display to the patient's weight.

With a mechanical height rod or no height rod, pressing the key once allows the operator to enter the height of the patient using the ▲**RECALL** or ▼**STORE** keys to increment or decrement to the correct height. After entering the patient's height, pressing it again will display the Body Mass Index (BMI) calculation. Pressing it a third time, will return the display to the patient's weight.

The ▼**STORE** and ▲**RECALL** keys are multi-purpose keys. They are used to Toggle between "on" or "off" in setting mode; speedily go forward; change the value of height and age, toggle between Male and Female, toggle between Normal and Athlete mode.

In the Memory Function operation, pressing the ▼**STORE** key will select the MEM position (1 through 4) to store the current weight on the scale. Repeatedly pressing the key, will advance to the next memory location and return to the first.

Pressing the ▲**RECALL** key will select the MEM position (1 through 4) and display the weight stored in that location. Repeatedly pressing the key, will step through each memory location and return to displaying the current weight.

0 to 9 The **0** through **9** numeric keys are used to enter numeric data during normal operation as well as during the setup and calibration of the scale.

NOTE: The **0** and **1** keys have dual functions.

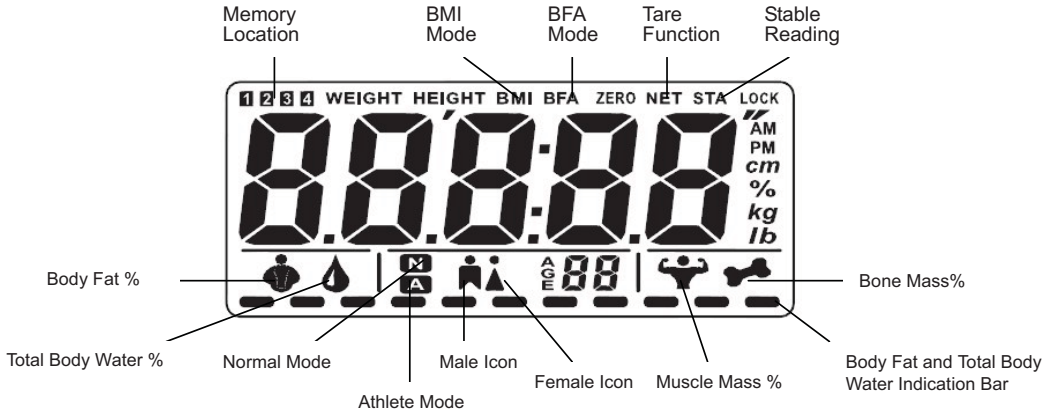
0/ZERO In the weight mode, pressing this key will reset the display to zero up to the zero limit set during calibration.

1/TARE In the weight mode, pressing this key will store the current weight as the new tare weight. The display will change to the net weight display mode (Net annunciator will turn on).

OPERATION

Annunciators

The annunciators are turned on to indicate that the scale display is in the mode corresponding to the annunciator label or that the status indicated by the label is active.



1 2 3 4

The 1, 2, 3, or 4 annunciator will flash to show which MEM position is being selected in the Memory Store and Recall Function.

WEIGHT

This annunciator is turned on when the scale is in the weight only mode.

HEIGHT

This annunciator is turned on when the scale is in the height measurement mode.

BMI (Body Mass Index)

This annunciator is turned on to indicate the scale is in the Body Mass Index mode.

BFA (Body Fat Analysis)

This annunciator is turned on to indicate the scale is in the Body Fat Analysis mode.

ZERO

This annunciator is turned on to indicate that the weight displayed is within +/- 1/4 division of the center of zero.

NET

This annunciator is turned on to show that the weight displayed is the net weight. Net weight is determined by subtracting the stored tare weight from the gross weight. The tare weight is for example the weight of a blanket or other item. Note that the NET annunciator is only active when a tare weight value is stored.

STA

This annunciator is turned on when the weight on the scale is stable.

LOCK

This annunciator is turned on to show that the scale is locked onto the displayed weight.

' "

These annunciators are turned on when the displayed height measurement is in feet and inches.

OPERATION

Annunciators, Cont.

AM
This annunciator is turned on to indicate that the displayed time is AM (before midday).

PM
This annunciator is turned on to indicate that the displayed time is PM (after midday).

cm
This annunciator is turned on when the displayed height measurement is in centimeters.

%
This annunciator is turned on to indicate the value display is a percentage. It is used when in the BFA mode when displaying Body Fat, Total Body Water, Muscle Mass and Bone Mass values.

kg
This annunciator is turned on to indicate that the displayed weight is in kilograms.

lb
This annunciator is turned on to indicate that the displayed weight is in pounds.

This annunciator is turned on to indicate the value display is the calculated Body Fat Percentage.

This annunciator is turned on to indicate the value display is the calculated Total Body Water Percentage.

N or A
These annunciators are turned on to indicate whether Normal (N) or Athlete (A) Mode has been selected when performing a BFA operation.

These annunciators are turned on to indicate which (male) or (female) gender has been selected when performing a BFA operation.

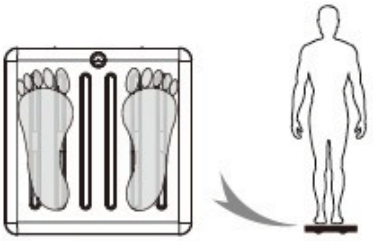
A
G
E
This annunciator is turned on to indicate the value displayed next to it is the age of the patient . It is used when performing a BFA operation.

This annunciator is turned on to indicate the value display is the calculated Muscle Mass Percentage.

This annunciator is turned on to indicate the value display is the calculated Bone Mass Percentage.

OPERATION

The accuracy of the results depends on how you stand on the scale. Position your feet for maximum contact on the metal electrodes on the platform. This ensures the best contact between your feet and the metal contacts. Stay on the scale until the body fat estimation is completed and the result is displayed.

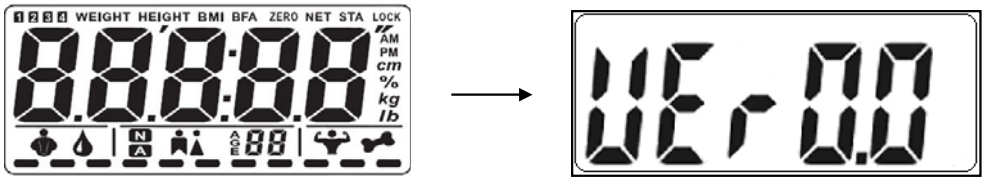


Heels centered on electrodes (√)

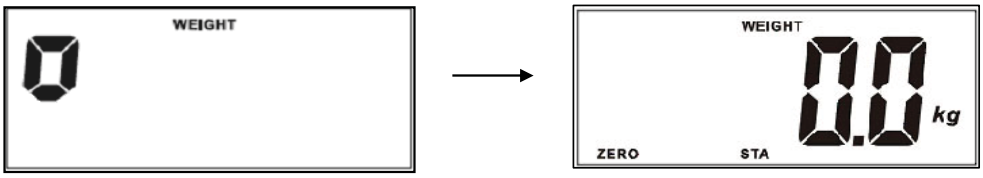
Heels not touching the electrode (X)

Weighing Only

1. Press **ON/OFF** key.
2. The display will turn on, show all digits and then the software version will be displayed for a few seconds.



3. Next, a small o is shown and moves across the display until a stable zero is established.



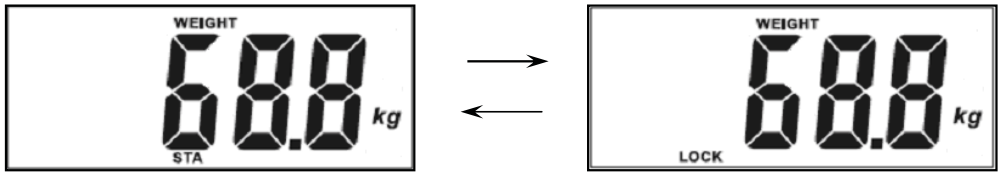
4. After establishing zero, the scale will show 0.0 on display.
5. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.
6. Patient may now step on scale and stand still while the weight is being measured. The **STA** annunciator will be turned on when the weight is stable.
7. Read and record weight displayed.
8. Patient may now step off scale.
9. To turn scale off, press **ON/OFF** key. Display will show oFF and turn off.
    - If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion or weight on scale). You must press the **ON/OFF** key to turn the scale back ON.
    - If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP. The scale will exit the Sleep Mode when any key is pressed or a patient steps on the scale.

OPERATION

Hold Function

In weighing mode, the weight can be held to let user clearly read the information.

1. Press **ON/OFF** key.
2. The display will turn on, show all digits and then the software version will be displayed for a few seconds.
3. Next, a small o is shown and moves across the display until a stable zero is established.
4. After establishing zero, the scale will show 0.0 on display.
5. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.
6. Patient may now step on scale and stand still while the weight is being measured. The **STA** annunciator will be turned on when the weight is stable.
7. Press the **LOCK/RELEASE** key to hold the weight, the weight with lock icon will be shown on the display.
8. Press **LOCK/RELEASE** key again to release the weight.



(Released) **(Locked)**

Tare Function

When weighing a patient with a blanket or other item, it is necessary to tare out the weight of the item in order to get an accurate weight reading.

1. Press **ON/OFF** key.
2. The display will turn on, show all digits and then the software version will be displayed for a few seconds.
3. Next, a small o is shown and moves across the display until a stable zero is established.
4. After establishing zero, the scale will show 0.0 on display.
5. Place the blanket or other item on the platform of scale. It will show the weight of the item.
6. Press the **1/TARE** key to tare the weight, the display will return to zero status with the Net annunciator turned on.
7. Remove the blanket or other item from the platform. A negative weight will be displayed.
8. To clear the tare weight, press the **1/TARE** key again to reset the display to zero.

(Item on scale) **(1/TARE key pressed)** **(Item removed from scale)**

OPERATION

Height Measuring Only with Digital Height Rod

1. Press **ON/OFF** key.
2. The display will turn on, show all digits and then the software version will be displayed for a few seconds.
3. Next, a small o is shown and moves across the display until a stable zero is established.
4. After establishing zero, the scale will show 0.0 on display.
5. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.
6. Make sure the height rod is in the starting position.

IMPORTANT! The digital height rod must be returned to its "starting position" before every use (the inner sliding tube must be down completely inside the outer stationary tube) and the headpiece folded flat against the stationary tube. Otherwise, ----- will be displayed.

7. Press the **MODE/ENTER HEIGHT** key to enter height measuring mode.
8. Patient may now step on scale.
9. Stand straight towards the height rod.
10. Grasp height rod at hinge pin (see Figure No. 26) and raise it well above patient's head and then lift headpiece to horizontal position.
11. Carefully lower height rod until headpiece rests on top of patient's head.
12. Record patient's height.
13. While holding headpiece horizontal, raise height rod well above patient's head.
14. Patient may now step off scale.
15. Return height rod to starting position.

Figure No. 26

16. To turn scale off, press **ON/OFF** key. Display will show oFF and turn off.

- If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion on scale).
- If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP.

Printing Function

Printing a Ticket

When the display is showing the results in BMI or Body Fat and Total Water Estimation Mode, and if a RS232 printer is connected to the scale, press the **PRINT/UNITS** key to print the results to a ticket.

Transferring Data to a Computer

When the display is showing the results in BMI or Body Fat and Total Water Estimation Mode, and the USB port of the scale is connected to a computer, press the **PRINT/UNITS** key to transfer the display data to the computer.

OPERATION

BMI Measure with Digital Height Rod

1. Press **ON/OFF** key.
2. The display will turn on, show all digits, the software version for a few seconds and then a small o is shown and moves across the display until a stable zero is established.
3. Next, after establishing zero, the scale will show 0.0 on display.
4. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.

   NOTE: Changing the units between kilograms and pounds will also change the height measurement between centimeters (cm) and feet/inches (' / ").
5. Make sure the height rod is in the starting position.

IMPORTANT! The digital height rod must be returned to its "starting position" before every use (the inner sliding tube must be down completely inside the outer stationary tube) and the headpiece folded flat against the stationary tube. Otherwise, ----- will be displayed.

6. Patient may now step on scale.
7. Press **MODE/ENTER/HEIGHT** key.
8. Grasp height rod at hinge pin (see Figure No. 27) and raise it well above patient's head and then lift headpiece to horizontal position.
9. Carefully lower height rod until headpiece rests on top of patient's head.
10. Press **MODE/ENTER/HEIGHT** key.
11. The display will change to the BFA mode (BFA annunciator will be flashing)
12. Press the ▲**RECALL** or ▼**STORE** keys to select the BMI mode (BMI annunciator will be flashing).
13. Press **MODE/ENTER/HEIGHT** key.
14. While the patient is still standing on the scale, the result will be shown in sequence: BMI, Weight and Height.

Figure No. 27

15. Each result will be displayed around 4 seconds, sequentially 3 times. Note that you can press the ▲**RECALL** or ▼**STORE** keys to rapidly go forward or backward to view the results. While the scale is displaying the result, record patient's BMI, Weight and Height.
16. The scale will then automatically return to the weighing mode.
17. While holding headpiece horizontal, raise height rod well above patient's head.
18. Patient may now step off scale.
19. Return height rod to starting position.
20. To turn scale off, press **ON/OFF** key. Display will show oFF and turn off.
    - If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion on scale).
    - If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP.

OPERATION

BMI Measure with Mechanical Height Rod or No Height Rod

1. Press **ON/OFF** key.
2. The display will turn on, show all digits, the software version for a few seconds and then a small o is shown and moves across the display until a stable zero is established.
3. Next, after establishing zero, the scale will show 0.0 on display.
4. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.

   NOTE: Changing the units between kilograms and pounds will also change the height measurement between centimeters (cm) and feet/inches (' / ").
5. Patient may now step on scale.
6. Press **MODE/ENTER/HEIGHT** key.
7. Enter the patient's height by using the numeric keys.

   A. If Pounds Only or Pounds/Kilograms was selected for Units in setup, display will change to show 5' 6. 1".with the digit for the feet flashing.
      a. Use numeric keys to enter 1 digit for height in feet, then press **MODE/ENTER/HEIGHT** key.
      b. Display will change to the digit flashing for the decimal inches.
      c. Use numeric keys to enter up to 2 digits (9.9 max.) for height in inches and then press **MODE/ENTER/HEIGHT** key.
      d. The display will change to the BFA mode (BFA annunciator will be flashing).
      e. Press the ▲**RECALL** or ▼**STORE** keys to select the BMI mode (BMI annunciator will be flashing).

   B. If Kilograms Only, Kilograms/Pounds or Stones and Pounds or Kilograms was selected for Units in setup, display will change to show 168.0cm.
      a. Use numeric keys to enter up to 4 digits (# # # . #) for height in centimeters and then press **MODE/ENTER/HEIGHT** key.
      b. The display will change to the BFA mode (BFA annunciator will be flashing).
      c. Press the ▲**RECALL** or ▼**STORE** keys to select the BMI mode (BMI annunciator will be flashing).
8. Press **MODE/ENTER/HEIGHT** key.
9. While the patient is still standing on the scale, the result will be shown in sequence: BMI, Weight and Height.
10. Each result will be displayed around 4 seconds, sequentially 3 times. Note that you can press the ▲**RECALL** or ▼**STORE** keys to rapidly go forward or backward to view the results. While the scale is displaying the result, record patient's BMI, Weight and Height.
11. The scale will then automatically return to the weighing mode.
12. Patient may now step off scale.
13. To turn scale off, press **ON/OFF** key. Display will show OFF and turn off.
    - If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion on scale).
    - If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP.

OPERATION

Body Fat and Total Body Water Estimation with Digital Height Rod

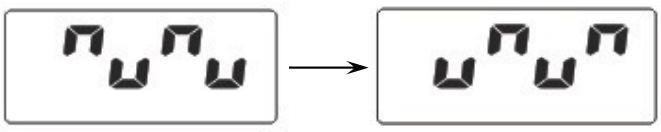
1. Press **ON/OFF** key.
2. The display will turn on, show all digits, the software version for a few seconds and then a small ₀ is shown and moves across the display until a stable zero is established.
3. Next, after establishing zero, the scale will show 0.0 on display.
4. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.

   NOTE: Changing the units between kilograms and pounds will also change the height measurement between centimeters (cm) and feet/inches (' / ").
5. Make sure the height rod is in the starting position.

   IMPORTANT! The digital height rod must be returned to its "starting position" before every use (the inner sliding tube must be down completely inside the outer stationary tube) and the headpiece folded flat against the stationary tube. Otherwise, - - - - - will be displayed.
6. Patient may now step on scale.
7. Press **MODE/ENTER/HEIGHT** key.
8. Grasp height rod at hinge pin (see Figure No. 28) and raise it well above patient's head and then lift headpiece to horizontal position.
9. Carefully lower height rod until headpiece rests on top of patient's head.
10. Press **MODE/ENTER/HEIGHT** key.
11. The display will change to the BFA mode (BFA annunciator will be flashing).
12. Press **MODE/ENTER/HEIGHT** key.
13. The display will change to show the AGE prompt.
14. Using the numeric keys, enter up to 2 digits for the patient's age and press the **MODE/ENTER/HEIGHT** key.

Figure No. 28

15. The display will change to show the GENDER selection (male) or (female).
16. Press the ▲**RECALL** or ▼**STORE** keys to select the gender and press **MODE/ENTER/HEIGHT** key.
17. The display will change to show the Normal (N) or Athlete (A) Mode selection.
18. Press the ▲**RECALL** or ▼**STORE** keys to select the Normal or Athlete Mode and press **MODE/ENTER/HEIGHT** key.
19. While the patient is still standing on the scale, the display will show a measurement pattern while computing.

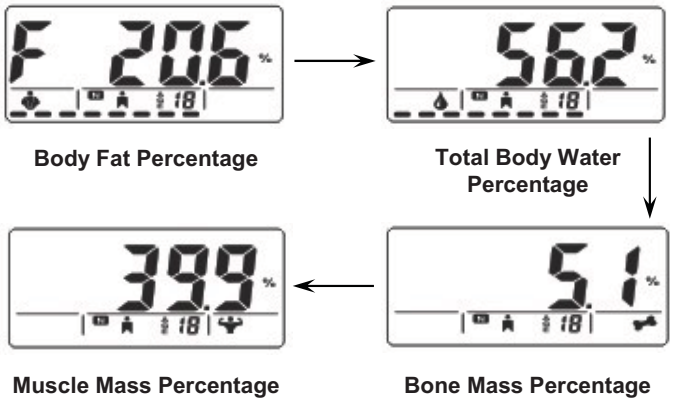


20. When the computation is complete, the body fat percentage, total body water percentage, muscle mass percentage and bone mass percentage will be shown on display in sequence.

OPERATION

Body Fat and Total Body Water Estimation with Digital Height Rod, Cont.

21. Each screen will be displayed around 4 seconds, sequentially 3 times. Note that you can press the ▲**RECALL** or ▼**STORE** keys to rapidly go forward or backward to view the results. While the scale is displaying the results, record patient's body fat percentage, total body water percentage, muscle mass percentage and bone mass percentage.



Body Fat Percentage

Total Body Water Percentage

Muscle Mass Percentage

Bone Mass Percentage

22. The scale will then automatically return to the weighing mode.

23. Patient may now step off scale.

21. Return height rod to starting position.

22. To turn scale off, press **ON/OFF** key. Display will show oFF and turn off.

- If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion on scale).
- If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP.

OPERATION

Body Fat and Total Body Water Estimation

with Mechanical Height Rod or No Height Rod

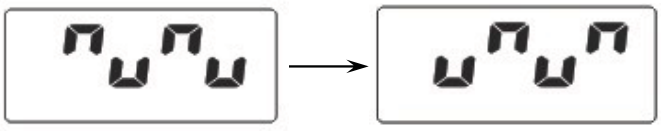
1. Press **ON/OFF** key.
2. The display will turn on, show all digits, the software version for a few seconds and then a small o is shown and moves across the display until a stable zero is established.
3. Next, after establishing zero, the scale will show 0.0 on display.

   NOTE: If the power up zero is too large, the display will show Err0 for a few seconds, then show oFF and turn the scale off.
4. Press and hold **PRINT/UNITS** key to toggle between kilograms and pounds. The kg or lb annunciator will turn on to show which weighing unit is active.

   NOTE: Changing the units between kilograms and pounds will also change the height measurement between centimeters (cm) and feet/inches (' / ").
5. Patient may now step on scale.
6. Press **MODE/ENTER/HEIGHT** key.
7. Enter the patient's height by using the numeric keys.

   A. If Pounds Only or Pounds/Kilograms was selected for Unit: in setup, display will change to show 5' 6. 1".with the digit for the feet flashing.
      a. Use numeric keys to enter 1 digit for height in feet, then press **MODE/ENTER/HEIGHT** key.
      b. Display will change to flashing the digit for the decimal inches.
      c. Use numeric keys to enter up to 2 digits (9.9 max.) for height in inches and then press **MODE/ENTER/HEIGHT** key.
      d. The display will change to the BFA mode (BFA annunciator will be flashing).

   B. If Kilograms Only, Kilograms/Pounds or Stones and Pounds or Kilograms was selected for Unit: in setup, display will change to show 168.0cm.
      a. Use numeric keys to enter up to 4 digits (# # # . #) for height in centimeters and then press **MODE/ENTER/HEIGHT** key.
      b. The display will change to the BFA mode (BFA annunciator will be flashing).
8. Press **MODE/ENTER/HEIGHT** key.
9. The display will change to show the AGE prompt.
10. Using the numeric keys, enter up to 2 digits for the patient's age and press the **MODE/ENTER/HEIGHT** key.
11. The display will change to show the GENDER selection (male) or (female).
12. Press the ▲**RECALL** or ▼**STORE** keys to select the gender and press **MODE/ENTER/HEIGHT** key.
13. The display will change to show the Normal (N) or Athlete (A) Mode selection.
14. Press the ▲**RECALL** or ▼**STORE** keys to select the Normal or Athlete Mode and press **MODE/ENTER/HEIGHT** key.
15. While the patient is still standing on the scale, the display will show a measurement pattern while computing.



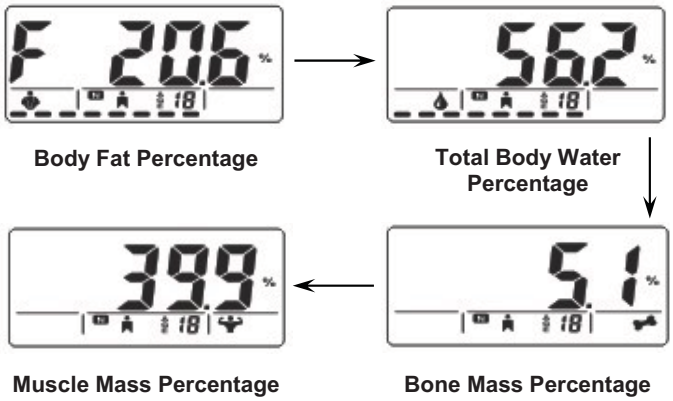
OPERATION

Body Fat and Total Body Water Estimation

With Mechanical Height Rod or No Height Rod, Cont.

16. When the computation is complete, the body fat percentage, total body water percentage, muscle mass percentage and bone mass percentage will be shown on display in sequence.

17. Each screen will be displayed around 4 seconds, sequentially 3 times. Note that you can press the ▲**RECALL** or ▼**STORE** keys to rapidly go forward or backward to view the results. While the scale is displaying the results, record patient's body fat percentage, total body water percentage, muscle mass percentage and bone mass percentage.



Body Fat Percentage

Total Body Water Percentage

Muscle Mass Percentage

Bone Mass Percentage

18. The scale will then automatically return to the weighing mode.

19. Patient may now step off scale.

20. To turn scale off, press **ON/OFF** key. Display will show oFF and turn off.

- If the Automatic Shutdown feature has been enable, the scale will turn off after a pre-defined time of inactivity (no motion on scale).
- If the Sleep Mode feature is active and the scale display is showing 0.0 kg/lb (remains at the center of zero) for a pre-defined time, the display will show SLEEP.

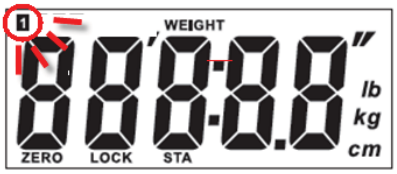
OPERATION

Memory and Recall Function

The scale features 4 personal memory settings. This allows users to store and recall their own settings.

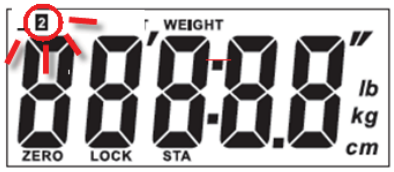
To Store Measured Data into Memory

1. With the display showing the results in the BMI or Body Fat and Total Water Estimation Mode, press and hold the ▼**STORE** key.
2. The MEM 1 position annunciator will flash.



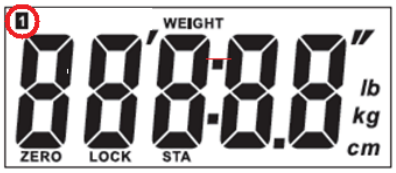
(Position 1 Selected)

3. Continue to press the ▼**STORE** key until the desired MEM position is selected. The MEM position annunciators (1, 2, 3 or 4) will flash to show which position is currently selected. Note that repeatedly pressing the ▼**STORE** key will advance to the next MEM position and return to the MEM 1 position.



(Position 2 Selected)

4. When the desired MEM position has been selected, press the **MODE/ENTER/HEIGHT** key.
5. The new results for the BMI or Body Fat and Total Water Estimation Mode operation will be stored in memory and replace the previously stored results.



(Weight Stored in Position 1)

6. Note that the result will then be displayed around 4 seconds, sequentially 3 times.
7. The scale will then automatically return to the weighing mode
8. Any previously turned on MEM position annunciators will turn off.

OPERATION

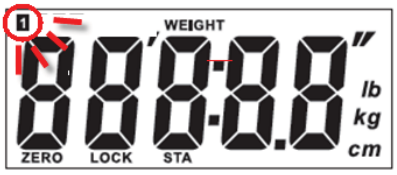
Memory and Recall Function, Cont.

To Recall Measured Data from Memory

1. With the scale in the weighing mode, press and hold the ▲**RECALL** key.

NOTE: If no data is stored in a MEM location, then the display will show 0.0.

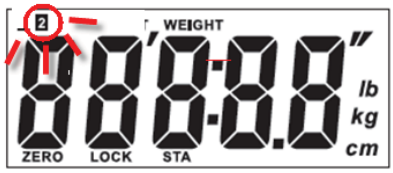
2. The MEM 1 position annunciator will flash and the stored data will be displayed*.



(Position 1 Selected)

3. To view the MEM 2 position, press the ▲**RECALL** key again.

4. The MEM 2 position annunciator will flash and the stored data will be displayed*.



(Position 2 Selected)

5. To view the MEM 3 position, press the ▲**RECALL** key again.

6. The MEM 3 position annunciator will flash and the stored data will be displayed*.

7. To view the MEM 4 position, press the ▲**RECALL** key again.

8. The MEM 4 position annunciator will flash and the stored data will be displayed*.

9. To exit Recall Memory and return to the weighing mode, press the ▲**RECALL** key again.

10. Note that if no key has been pressed for around 5 seconds, the scale will return to the weighing mode automatically.

* The results stored in the selected memory location will be displayed around 4 seconds, sequentially and then the scale will automatically return to the weighing mode.

SETUP

Your ProDoc BFA Series Scale has been pre-configured at the factory and should not require changes for use in most applications. However, if the factory settings do not meet the requirements of your operation, the following describes the setup process for your scale.

To Enter Setup

1. With the scale off, press and hold the **ZERO** key and then press the **ON/OFF** key.
2. The display will turn on all digits, show the software version for a few seconds and then change to show SEtUP.
3. Release all keys.
4. The display will change to show n in.
5. The scale is now ready for setup.

IMPORTANT! When a prompt and value displayed are acceptable, press the **MODE/ENTER/HEIGHT** key to save the setting and proceed to the next prompt. To change a setting, use the numeric keys to enter a new value and then press the **MODE/ENTER/HEIGHT** key to save the new setting and advance to the next prompt.

n in (MINUTES)

With display showing n in, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value from 00 to 59 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

hh (HOURS)

With display showing hh, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value from 00 to 23 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

IMPORTANT! Time is entered in a 24-hour format. When entering times after noon (12:00 PM), you must add 12 to time. For example, 3:00 PM would be entered as 15.

YY (YEARS)

With display showing YY, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value from 00 to 99 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Note that 00 represents year 2000, 01 represents 2001 and so on.

nn (MONTHS)

With display showing nn, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value from 00 to 12 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Note that 01 represents January, 02 represents February so on.

dd (DAY)

With display showing dd, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value from 00 to 31 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

SETUP, CONT.

CrLF (CARRIAGE RETURN LINE FEED OPTION)

Data sent from the serial port can be terminated with a single carriage return and either no line feed or a single line feed command.

With display showing CrLF, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value 0 or 1 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

0 = CLrF is Disabled **1** = CLrF is Enabled

EOP (END OF PRINT LINEFEEDS)

At the end of data sent to a printer, a pre-selected number of line feed commands can be sent to space the paper in the printer to the desired position for withdrawal or for the next print.

With display showing EOP, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to adjust the number of line feeds and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

00 = EOP is Disabled

01 to **99** = The number of lines sent after End Of Print.

USb (USB PORT FUNCTION)

With display showing USb, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value 00, 01 or 02 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

00 = No Output (disabled)

01 = FORMAT “1” (Ticket Format) *

02 = FORMAT “2” (Journal Format) *

* Refer to the OUTPUT FORMATS section of this manual for more information on the Ticket and Journal Formats.

NOTE: This is a USB device port. It is assumed to connect to a USB HOST, such as a PC only.

rS232 (RS232 PORT FUNCTION)

With display showing rS232, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value 00, 01 or 02 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

00 = No Output (disabled)

01 = FORMAT “1” (Ticket Format) *

02 = FORMAT “2” (Journal Format) *

* Refer to the OUTPUT FORMATS section of this manual for more information on the Ticket and Journal Formats.

SETUP, CONT.

bAUd (SERIAL OUTPUT BAUD RATE) FOR PRINTER ONLY

With display showing bAUd, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value 0, 1, 2, 3, or 4 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

0 = 1200 Baud **1** = 2400 Baud **2** = 4800 Baud
3 = 9600 Baud **4** = 19.2k Baud

Un It (UNIT SETTING)

With display showing Un It, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value 1, 2, 3, or 4 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

1 = Pounds Only **2** = Kilograms Only
3 = Pounds/Kilograms **4** = Kilograms/Pounds

IMPORTANT! If 1 or 2 (Pounds Only or Kilograms Only) are selected, the **UNITS** function of the **PRINT/UNITS** key will be disabled.

ASH (AUTOMATIC SHUTOFF)

With display showing ASh, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value (from 0 to 9 minutes) and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Note that selecting 0 disables the automatic shutoff feature.

SLP (SLEEP MODE)

With display showing SLP, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value (from 0 to 9 minutes) and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Note that selecting 0 disables the sleep mode feature.

Once the **MODE/ENTER/HEIGHT** key has been pressed at the Sleep Mode prompt, all Setup Process settings (current or new values) will be saved and the Setup Process will be finished. The display will show oFF and then shut the scale off.

NOTE: When you have finished changing Setup, the configuration counter will be increased by one.

CALIBRATION

Your ProDoc BFA Series Scale was calibrated at the factory and should not require adjustment. In the event that the scale should need re-calibration, the following describes the calibration procedure. To maintain the instrument's high degree of accuracy, a qualified technician should perform this function.

Before beginning calibration, the following equipment is required:

150 kg (330 lbs) of calibrated test weight

To Enter Calibration

1. With the scale off, press and hold the **ZERO** and the **MODE/ENTER/HEIGHT** keys and then press the **ON/OFF** key.
2. The display will turn on all digits, show the software version for a few seconds and then change to show CAL.
3. Release all keys.
4. The display will change to show USA.
5. The scale is now ready for calibration.

IMPORTANT! When a prompt and value displayed are acceptable, press the **MODE/ENTER/HEIGHT** key to save the setting and proceed to the next prompt. To change a setting, use the numeric keys to enter a new value and then press the **MODE/ENTER/HEIGHT** key to save the new setting and advance to the next prompt.

USA (SET ZERO LIMIT)

This prompt selects whether the scale is used in the USA and has a zero limit or outside the USA with no zero limit.

With display showing USA, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value 0 or 1 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

0 = +/- 2% limit in zero setting (with maximum capacity up to +9d)

1 = No limit in zero setting and maximum capacity up to +4%)

HoLd (HOLD MODE) "Lock Feature"

With display showing HOLd, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to enter a new value 0 or 1 and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

0 = Disable Hold Mode **1** = Enable Hold Mode

NOTE: The Hold Mode "lock feature" is for non-commercial applications and must be disabled for "Legal for Trade" applications.

CALIBRATION, CONT.

IMPORTANT! This scale is equipped with an acceleration of gravity constant function which allows the scale to be calibrated in one location and then adjusted to match the acceleration of gravity at the location where it will used.

SEtGC (SET CALIBRATED GRAVITY CONSTANT)

With display showing SEtGC, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

NOTE: Allowable values are 9.700 through 9.900.

CALGC (SET OPERATED GRAVITY CONSTANT)

If the value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to show current setting. If value displayed is acceptable, press **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt. Otherwise, use the numeric keys to select a new value and then press the **MODE/ENTER/HEIGHT** key to save it and proceed to the next prompt.

NOTE: Allowable values are 9.700 through 9.900.

CALn (CALIBRATE SCALE) "*Recommended to use 150kg for Calibration*"

Step 1. The display will change to show CALn.

Step 2. To skip calibration and save the previous settings, press the **MODE/ENTER/HEIGHT** key. The display will show oFF and then shut the scale off. Proceed to Step 12.

Step 3. Otherwise press the ▲**RECALL** or ▼**STORE** keys to select Y (Y = Yes, start calibration) and then press the **MODE/ENTER/HEIGHT** key.

Step 4. Make certain the scale platform is empty and free of debris. Note that the internal count will be shown on the display.

Step 5. When the reading is stable, press the **MODE/ENTER/HEIGHT** key to save the zero reference point.

Step 6. Place the calibrated test weights on the scale platform.

Step 7. Input the test weight value digits using the ▲**RECALL** or ▼**STORE** keys and then press the **MODE/ENTER/HEIGHT** key.

Step 8. Weight reading will be stored when reading is stable and **STA** is shown.

Step 9. The display will show oFF and then shut the scale off.

Step 10. Remove the test weights from the scale platform.

Step 11. All settings and the new calibration have been saved.

Step 12. The scale is now ready for normal operation.

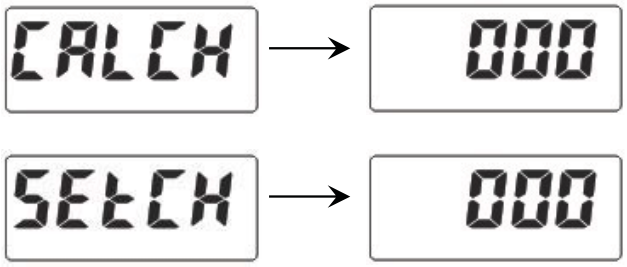
NOTE: When you have finished the Calibration procedure, the calibration counter will be increased by one.

EVENT COUNTERS

The ProDoc BFA Series Scale has been designed with an Event Counter type of security seal. When selected, the ProDoc display will show a 3-digit number representing the Calibration counter and then a 3-digit number representing the Setup counters.

To Review the Event Counter

1. If scale is on, press **ON/OFF** key.
2. Display will show oFF and turn scale off.
3. Press and hold the **LOCK/RELEASE** key and then press the **ON/OFF** key.
4. The display will turn on all digits, show the software version for a few seconds and then change to show CALCH.
5. Release all keys.
6. The display will show CALCH for two seconds and then change to show the 3-digit calibration counter.
7. Next, the display will show SEtCH for two seconds and then change to show the 3-digit setup counter.
8. To return to normal operation, press the **PRINT/UNITS** key.
9. Otherwise, press **ON/OFF** key to turn off scale.



OUTPUT FORMATS

The following formats apply to both the Serial port and the USB port. Note that the Serial port is to be used with a ticket printer and that the USB port can only communicate with a computer.

FORMAT "1" (Ticket Format)

If FORMAT "1" (Ticket Format) was selected for the USB or RS232 PORT FUNCTION, USb: 1 or rS232: 1, the data will be printed (RS232) or output (USB) in the format below. Note that the output of this format includes spaces and descriptions.

Time, mm/dd/yy	
BMI	21.5
Height	175.0cm
Weight	68.0kg
Age	30 yrs
Gender	Female
Activity	Normal
Body Fat	10%
Body Water	20%
Bone Mass	15%
Muscle Mass	25%

FORMAT "2" (Journal Format)

If FORMAT "2" (Journal Format) was selected for the USB or RS232 PORT FUNCTION, USb:2 or rS232:2, the data will be printed (RS232) or output (USB) in the format below. Note that the output of this format includes commas between each field and a carriage return to terminate the record.

Time, Date, BMI, Height, Weight, Age, Gender, Activity, Body Fat, Body Water, Bone Mass, Muscle Mass <Cr>

REMOTE PRINT COMMAND

The host device (computer) sends:

<LF> P <CR>

This command is equivalent to pressing and holding the **UNIT/PRINT** key for over 2 seconds. The scale will respond by outputting to the USB port either Format "1" or Format "2" based on the parameters selected in the USB PORT FUNCTION section of setup.

PROBLEM-SOLVING

1. No weight displayed.

Check if the scale is powered up and started up. If not, please refer to the **PREPARATION BEFORE USE** section.

2. Why does the display read LobAt?

Battery is running low. Replace the battery.

3. The message displays Err 0.

The scale cannot get zero weight properly. Remove all weight from platform turn press the **ON/OFF** key twice to turn the scale OFF and back ON again.

4. The message displays Err when setting calibration.

The value is not acceptable. Please modify the values.

5. The message displays Err 3 when estimating body fat and total body water values.

Contact error. Impedance cannot be measured. Please make sure that you are standing still on the scale and maintaining maximum contact between your feet and the metal contacts. Please refer to the **Operation** section. You may need to moisten your feet to improve the electrical contact.

6. The message displays Err 4 when estimating body fat and total body water values.

Estimated body fat percentage is beyond the technical limit. Moistening your feet may help to improve the electrical contact.

7. The message displays Err 4 when estimating body fat and total body water values.

Percentage total body water is out of range. Moistening your feet may help to improve the electrical contact.

8. The message displays uStb when measuring.

Unstable zero. Step off the scale, then step on the scale again.

9. I have tried all corrective actions, but still can't solve the problem.

Please contact your scale service representative.

CARE AND MAINTENANCE

- Do not disassemble the scale; it contains no user serviceable parts. Damage to the scale may occur as a result of improper handling.
- Remove battery when the scale is not used for a prolonged period of time.
- Clean the scale after use with a lightly dampened cloth. Do not use solvents or immerse the unit in water.
- Avoid excessive impact or vibration to the scale, such as dropping it onto the floor.